

al  
cont

substantially V-shaped end of the tooth section 230. The stacked strips configured as described and as depicted by Figs. 4A and 4B also define a second free end 234 of the tooth section 230 that is substantially planar and that comprises the tooth or pole 40 of the stator 200. Lines N depict directions normal to the surfaces of the amorphous ribbons comprised in tooth section 230 and back iron section 220, respectively. --

Page 10, line <sup>24</sup>14, delete the paragraph beginning "Referring to Figs. 5 and 6", and substitute therefor the following paragraph:

al

-- Referring to Figs. 5 and 6, there is shown a second embodiment of the stator 200 of the present invention. Rotor 100 is appointed to rotate as depicted about an axis centrally located in the rotor and perpendicular to the plane of Fig. 5. Stator 200 is made up of a predetermined number of segments 250 that are generally C-shaped (when viewed in cross-section, as in Fig. 6) and that are arranged in abutting relation with each other in a generally cylindrical form. Each C-segment 250 is comprised of a plurality of layers of amorphous metal strips 212 that are individually cut to their respective predetermined sizes and thereafter formed to the desired shape. The strips 212 are stackingly arranged so that metal-to-metal contact is provided among the stacked amorphous metal strips 212. Two substantially planar free ends 252 are defined by each C-segment 250 that comprise, at least in part, the poles 40 of the stator 200. After being formed, the C-segments 250 are individually annealed at temperatures of about 360°C while being subjected to a magnetic field. The C-segments 250 retain their formed shape after the annealing process. Once a predetermined number of C-segments 250 are arranged to form the stator 200, as depicted in Fig. 5, the stator 200 is coated or impregnated with an epoxy resin 202 to hold the C-segments 250 together, and also to provide mechanical strength and support to the stator 200 during use in the electric motor 20. The epoxy resin 202 optionally covers the two free ends 252 of the C-segment 250. Alternatively, or in addition to the epoxy resin 202, an inner restraining band 206 may be used to secure the C-segments 250 in place and to supply the desired additional structural rigidity to the stator 200. The band 206

42  
Cont.

may secure the teeth or poles 40, the sections between the poles, or both, provided that the inner restraining band 206 does not significantly increase the space required between the rotor 100 and the stator teeth 40, i.e. does not significantly increase the air gap 50. An outer restraining band 204, preferably made of steel, is provided peripherally about the stator 200 to secure the plurality of C-segments 250 in generally circular abutting relation with each other. The outer band 204 strengthens the overall construction of the stator 200 and provides an additional level of safety in the case of catastrophic and destructive motor failure by preventing loose motor parts from breaking loose and causing injury to persons located nearby. --

### IN THE CLAIMS

Rewrite claim 36 as follows:

36. (Amended) A brushless radial flux DC motor comprising:

- A3
- a) an amorphous metal stator and a rotor disposed for rotation therewithin, said stator comprising a plurality of heat-treated segments, each segment comprising a plurality of layers of amorphous metal strips, each of which has a top and a bottom surface and is oriented such that (i) a line normal to either of said surfaces at substantially any point thereon is substantially perpendicular to the axis of rotation of said rotor, and (ii) said flux traverses said segment without crossing an air gap, and said stator having a core loss less than "L" when operated at an excitation frequency "f" to a peak induction level  $B_{max}$  wherein L is given by the formula  $L = 0.0074 f (B_{max})^{1.3} + 0.000282 f^{1.5} (B_{max})^{2.4}$ , said core loss, said excitation frequency and said peak induction level being measured in watts per kilogram, hertz, and teslas, respectively; and
- b) means for supporting said stator and said rotor in predetermined positions relative to each other.